WHAT IS CLAIMED IS:

1. A composite article comprising a first polymeric substrate layer and a second polymeric substrate layer, each of said polymeric substrate layers having at least a diffusion-inhibiting barrier disposed on a surface thereof, wherein diffusion-inhibiting barriers on said substrate layers face each other within said composite article.

2. The composite article according to claim 1, wherein at least one diffusion-inhibiting barrier comprises a material, the composition of which varies across a thickness thereof.

3. The composite article according to claim 2, wherein compositions of regions across a thickness of said at least one diffusion-inhibiting barrier are selected from the group consisting of organic materials and inorganic materials.

4. The composite article according to claim 1, wherein at least one diffusion-inhibiting barrier comprises a plurality of alternating sublayers of at least an organic polymeric material and at least an inorganic material.

5. The composite article according to claim 4; wherein said inorganic material is selected from the group consisting of metals, metal oxides, metal nitrides, metal carbides, metal oxynitrides, metal oxyborides, and combinations thereof; and said organic material is selected from the group consisting of polyacrylates, polyurethanes, polyamides, polyimides, polybutylenes, isobutylene isoprene, polyolefins, epoxies, parylene, benzocyclobutadiene, polynorbomenes, polyarylethers, polycarbonate, alkyds, polyaniline, ethylene vinyl acetate, ethylene acrylic acid, derivatives thereof, and combinations thereof.

6. The composite article according to claim 1, further comprising a chemically resistant hardcoat disposed on a surface of one of said polymeric substrate layers opposite to a diffusion-inhibiting barrier.

7. The composite article according to claim 1, further comprising a layer of an electrically conducting material disposed on a surface of one of said polymeric substrate layers opposite to a diffusion-inhibiting barrier.

8. An apparatus comprising:

(a) a composite article that comprises a first polymeric substrate layer and a second polymeric substrate layer, each of said polymeric substrate layers having at least a diffusion-inhibiting barrier disposed on a surface thereof, wherein diffusion-inhibiting barriers on said substrate layers face each other within said composite article; and

(b) an electronic device disposed on said composite article.

9. The apparatus according to claim 8, wherein at least one diffusion-inhibiting barrier comprises a material, the composition of which varies across a thickness thereof.

10. The apparatus according to claim 9, wherein compositions of regions across a thickness of said at least one diffusion-inhibiting barrier are selected from the group consisting of organic materials and inorganic materials.

11. The apparatus according to claim 8, wherein at least one diffusion-inhibiting barrier comprises a plurality of alternating sublayers of at least an organic polymeric material and at least an inorganic material.

12. The apparatus according to claim 11, wherein said inorganic material is selected from the group consisting of metals, metal oxides, metal nitrides, metal carbides, metal oxynitrides, metal oxyborides, and combinations thereof; and said organic material is selected from the group consisting of polyacrylates, polyurethanes, polyamides, polyimides, polybutylenes, isobutylene isoprene, polyolefins, epoxies, parylene, benzocyclobutadiene, polynorbomenes, polyarylethers, polycarbonate, alkyds, polyaniline, ethylene vinyl acetate, ethylene acrylic acid, and combinations thereof.

13. The apparatus according to claim 8, wherein said electronic device comprises an electronically active material disposed between a pair of electrodes.

14. The apparatus according to claim 13, wherein said electronic device is an organic electroluminescent device.

15. The apparatus according to claim 13, wherein said electronic device is an organic photovoltaic device.

16. A method for making a composite article, said method comprising:

(a) providing a first polymeric substrate layer and a second polymeric substrate layer;

(b) forming at least a diffusion-inhibiting barrier on a surface of each of said polymeric substrate layers to produce a coated polymeric substrate layers; and

(c) attaching said coated polymeric substrate layers together to produce said composite article such that diffusion-inhibiting barriers on said coated polymeric substrate layers face each other within said composite article.

17. The method according to claim 16, wherein said forming comprises depositing a material the composition of which varies across a thickness of said barrier.

18. The method according to claim 17, wherein said composition varies continuously between organic and inorganic materials.

19. The method according to claim 16, wherein said forming comprises depositing a plurality of sublayers of organic and inorganic materials.

20. The method according to claim 16, wherein said attaching is effected by a lamination process using at least one of vacuum, heat, pressure, and combinations thereof.

21. The method according to claim 20, wherein said attaching further comprising applying an adhesive between said diffusion-inhibiting barriers.

22. The method according to claim 21, further comprising applying radiation to cure said adhesive.

23. The method according to claim 16, further comprising forming a chemically resistant hardcoat on a surface of one of said polymeric substrate layers opposite to a diffusion-inhibiting barrier.

24. The method according to claim 16, further comprising forming an electrically conducting layer on a surface of one of said polymeric substrate layers opposite to a diffusion-inhibiting barrier.

25. A method for making an apparatus, said method comprising:

(a) forming a composite support article, wherein said forming comprises: (1) providing a first polymeric substrate layer and a second polymeric substrate layer; (2) forming at least a diffusion-inhibiting barrier on a surface of each of said polymeric substrate layers to produce a coated polymeric substrate layers; and (3) attaching said coated polymeric substrate layers together to produce said composite support article such that diffusion-inhibiting barriers on said coated polymeric substrate layers face each other within said composite support article; and

(b) disposing an electronic device on said composite support article.

26. The method according to claim 25, further disposing a second composite support article on said electronic device.